查询A132000供应商

Preliminary

Document Title

ADPCM SOUND CONTROLLER

Revision History

Rev. No.	History	Issue Date	Remark
0.0	Initial issue	December 14, 1999	Preliminary

A132000

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General Description

The A132000 is a fully CMOS integrated circuit. It uses advanced design and process technology to combine an 8-bit RISC processor with program/data ROM, 80-byte working SRAM, timer/counter, I/O, built-in oscillator and audio current mode D/A. The high speed RISC processor can implement software based audio processing, data compression, LCD display, functional control and others.

Features

- 8-bit RISC controller
- Provide 2Mbit ROM area
- Provide maximum 2K bytes ROM area for program data
- 80bytes working SRAM
- Audio output, audio output current: 5 mA
- 8-bit timer/counters with 8-bit programmable prescaler
- Provide 8-bit current output D/A
- Provide 20 general I/Os
- Provide 4 output only drive LEDs
- Key wake up function
- Low voltage reset function
- Crystal Operation or Built-in 4M Hz RC-Oscillator Operation
- ESD, insensitive
- Two-level hardware push/pop stack
- Only 33 single word instruction to learn
- Wide operation range:2.7V-5.5V
- Software audio for speech and melody
- Provide 60 seconds playing of audio or speech voice
- Built-in watch dog timer
- Clock stop mode
- ADPCM encoding/decoding method
- Power-On Reset (POR)

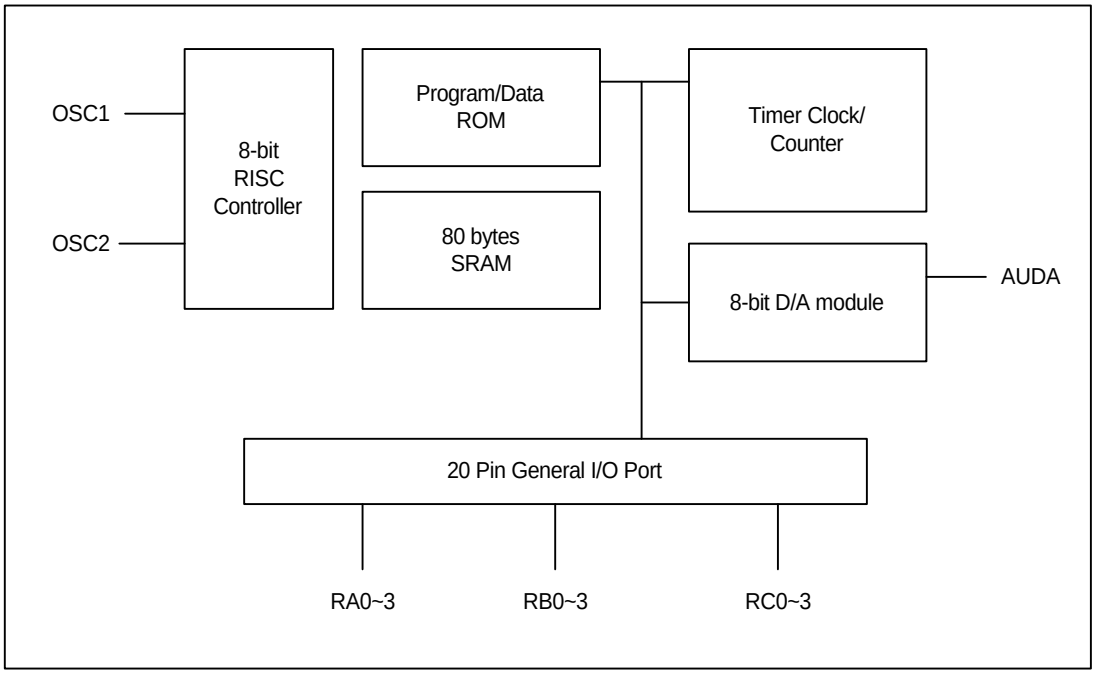
Application Field

- Intelligent education toys
  ex. Pattern to voice (animal, car, color etc.)
- Spelling (A,B,C or Chinese)
- Math game
- High-end toy controller
- Talking instrument controller
- General speech synthesizer
- Industrial controller

Package Type

- Dice Form

Block Diagram



Pin Description

Symbol	I/O	Function
VCC	I	Positive Power Supply
VSS	I	Negative Power Supply
OSC1/CLKIN	I	Oscillator Crystal Input / External Clock Source Input (Crystal Mode) / External resister Input (RC Mode).
OSC2/CLKOUT	I	Oscillator Crystal Output.
T0CKI	I	Clock Input to Timer0. Must tied to VSS or VCC if not in use
MCLRB	I	Master Clear Input. The pin active low reset to the device
RA0 ~ RA3	I/O	Bi-directional I/O port, Wakeup (Pad Option)
RB0 ~ RB7	I/O	Bi-directional I/O port
RC0 ~ RC7	I/O	Bi-directional I/O port
AUDA	O	Audio output
OPRA0 ~ OPRA3	I	For RA0 ~ RA3 Wakeup Enable Option / Default = 1 (Enable)
CLKOP	I	1: (RC-OSC Mode) 0: (XTAL Mode) / Default = 1 (RC-OSC Mode)
TESTB	I	Reserved for Testing Mode
TSIN	I	Reserved for Testing Mode
TSOUT	O	Reserved for Testing Mode
TS1~TS0	I	Reserved for Testing Mode

Absolute Maximum Ratings

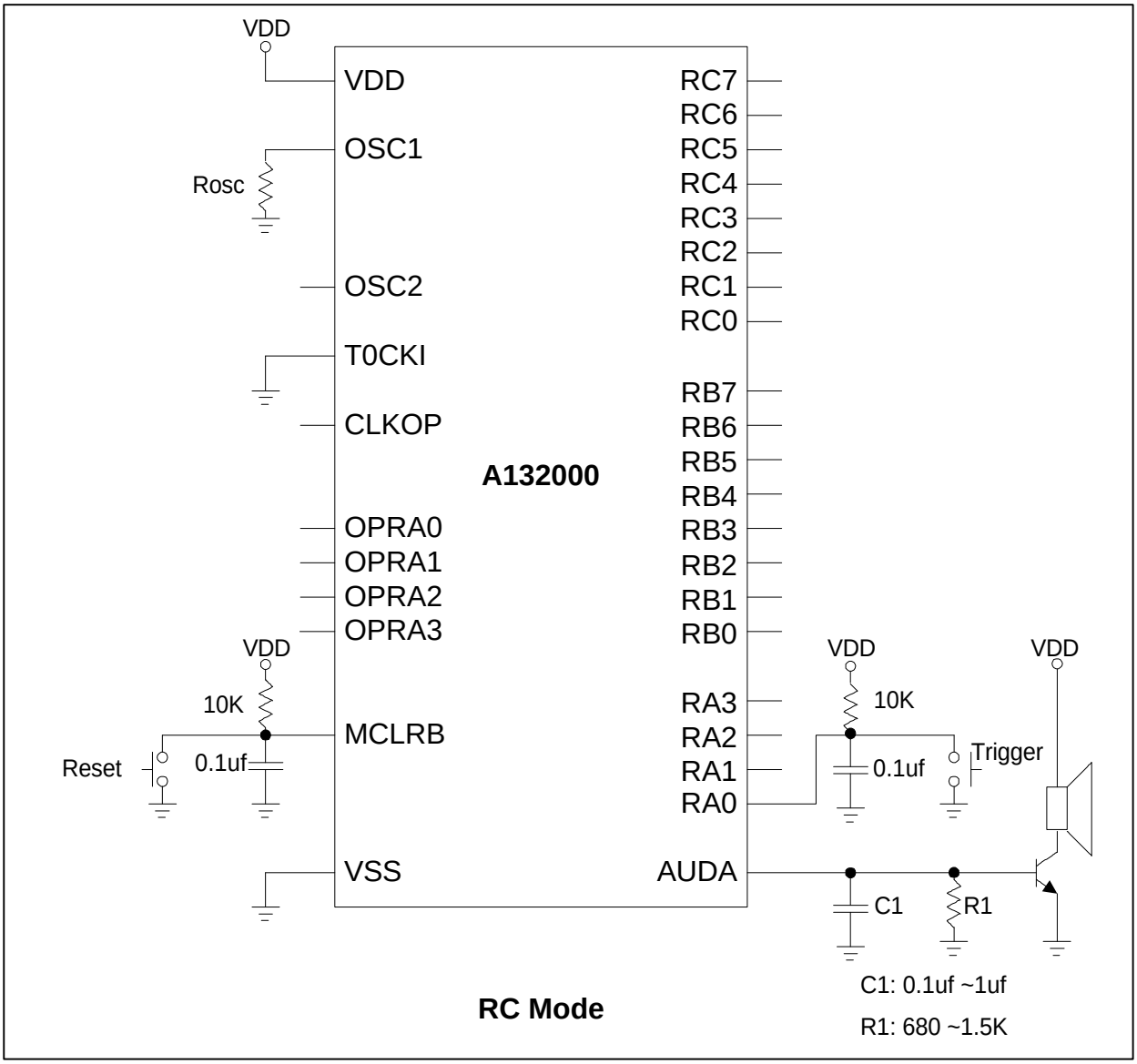
Characteristics	Symbol	Min.	Max.	Unit
Operating Temperature	Top	0	70	°C
Storage Temperature Range	Ts	-55	+125	°C
Input Voltage	V_{DD} / Vss	V_{DD} - 0.5	V_{DD} + 0.5	V
Supply Voltage	V	-0.5	+6.0	V

Electrical Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Condition
Operating Voltage	V_{DD}	2.7		5.5	V	
Standby Current	I_{DDS}			10.0	μA	V_{DD} = 5V
Operating Current	I_{DDO}			10.0	mA	V_{DD} = 5V No Load
Input Low Voltage	V_{IL}	0		0.8	V	
Input High Voltage	V_{IH}	2.4		V_{DD}+0.2	V	
Output Low Voltage						V_{DD} = 5V
RC4-RC7	V_{OL}			0.6	V	I_{OL} = 12mA
RA,RB,RC0-RC3	V_{OL}			0.6	V	I_{OL} = 2mA
Output High Voltage						V_{DD} = 5V
RC4-RC7	V_{OH}	V_{DD}-0.7V			V	I_{OH} = -12mA
RA,RB,RC0-RC3	V_{OH}	V_{DD}-0.7V			V	I_{OH} = -2mA
Output Current of AUDA	I_{AUDA}			5.0	mA	V_{DD} = 5V
Oscillation Resistor	Rosc	8		10	KΩ	V_{DD} = 5V
RC-Oscillator Frequency	Fosc		4		MHz	V_{DD} = 5V

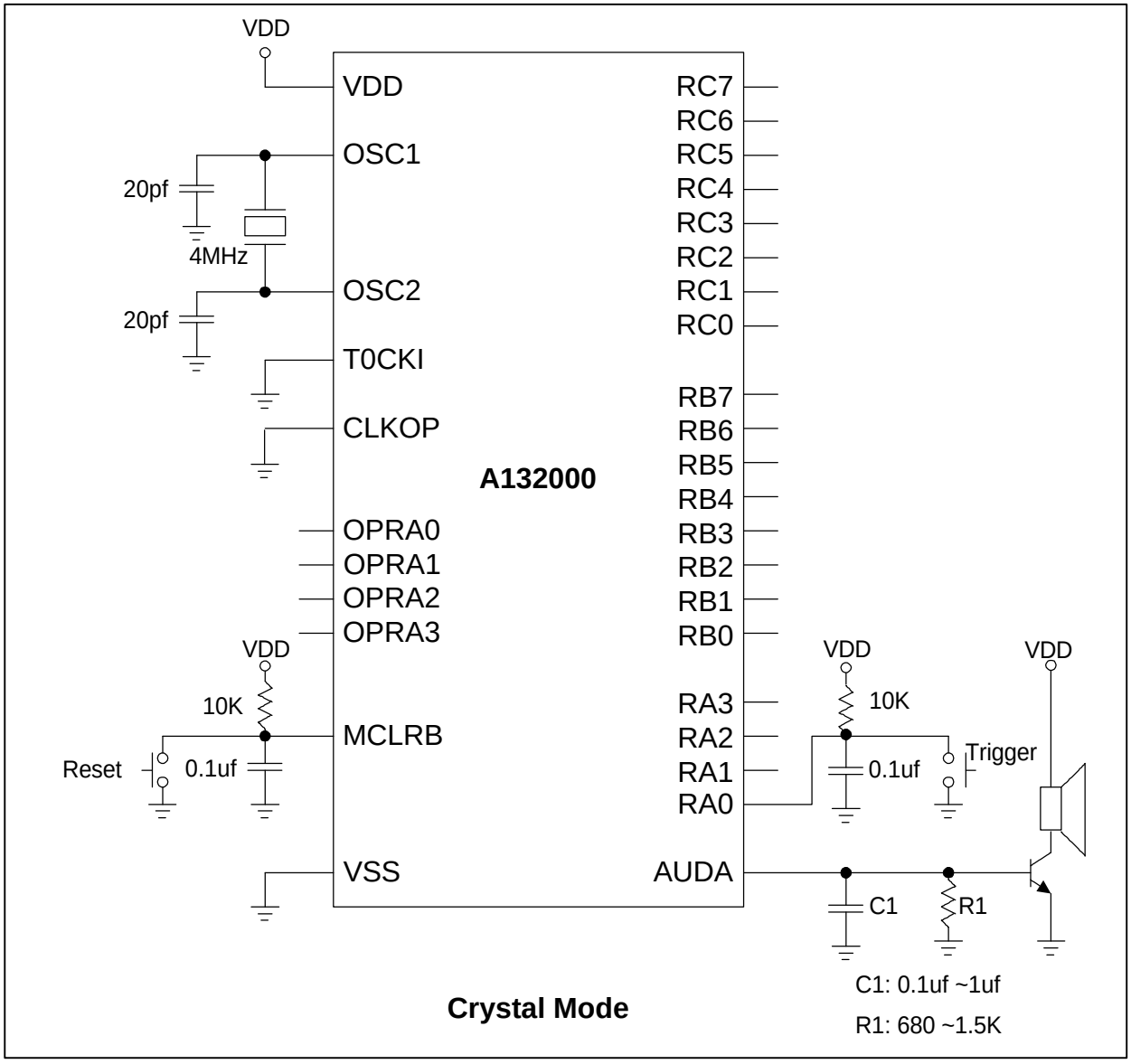
Application Circuits

RC Operating Mode Application Circuit



Application Circuits (Continued)

Crystal Operating Mode Application Circuit

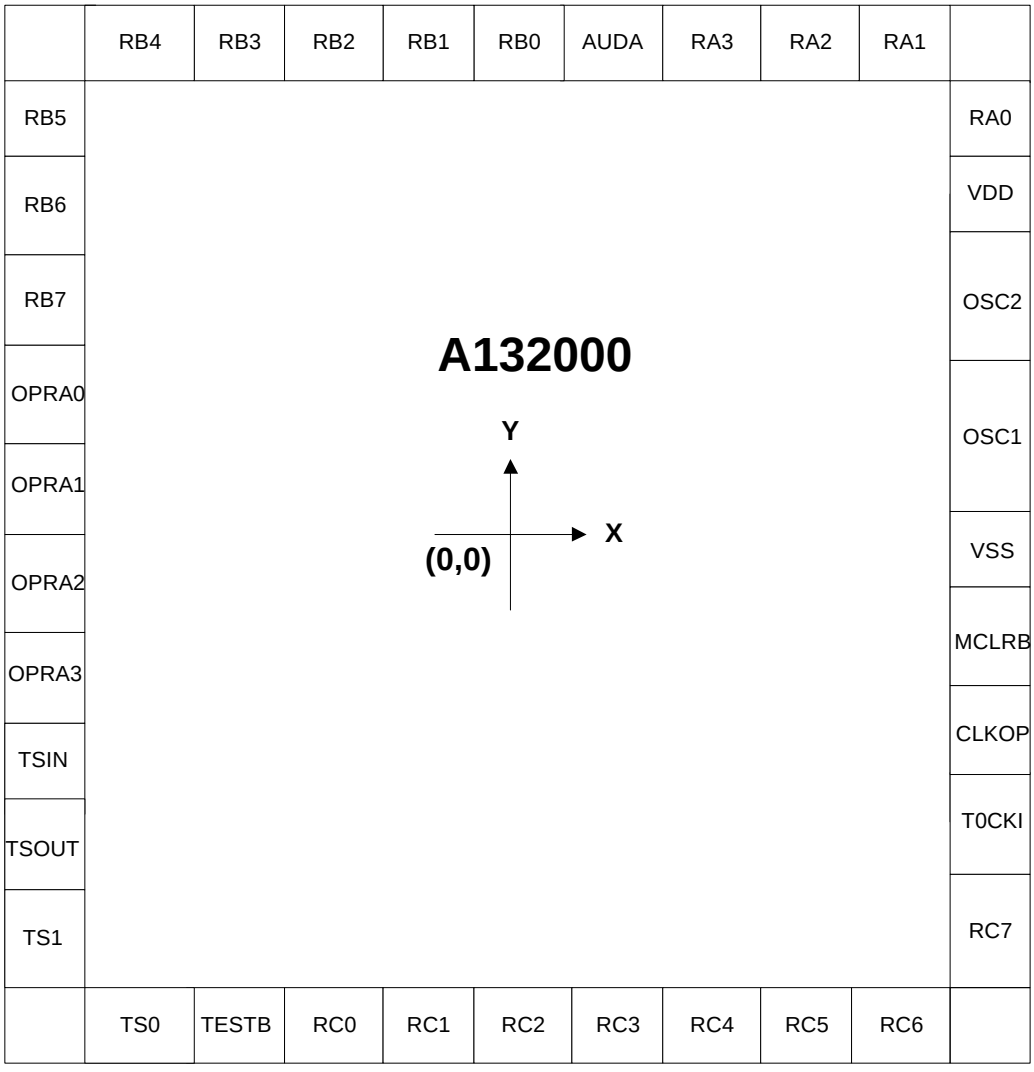


Crystal Mode

Ordering Information

Part No.	Package
A132000H	Chip Form

Pad Diagram



Chip Size: 2820 um * 2820um

This IC substrate should be connected to VSS

Pad Locations

Symbol	X	Y
RA0	+1315.7	+1095.7
VDD	+1315.7	+873.1
OSC2	+1315.7	+635.97
OSC1	+1315.7	+81.4
VSS	+1315.7	-141.2
MCLRB	+1315.7	-392.4
CLKOP	+1315.7	-615.3
T0CKI	+1315.7	-866.2
RC7	+1315.7	-1088.8
RC6	+943.9	-1414.6
RC5	+721.3	-1414.6
RC4	+470.1	-1414.6
RC3	+247.5	-1414.6
RC2	-6.0	-1414.6
RC1	-226.3	-1414.6
RC0	-479.9	-1414.6
TESTB	-700.1	-1414.6
TS0	-951.3	-1414.6
TS1	-1315.7	-1070.9
TSOUT	-1315.7	-819.7
TSIN	-1315.7	-597.1
OPRA3	-1315.7	-345.9
OPRA2	-1315.7	-123.3
OPRA1	-1315.7	+127.9
OPRA0	-1315.7	+350.5
RB7	-1315.7	+601.7
RB6	-1315.7	+824.3
RB5	-1315.7	+1075.5
RB4	-951.3	+1414.6
RB3	-700.1	+1414.6
RB2	-477.5	+1414.6
RB1	-226.3	+1414.6
RB0	-3.7	+1414.6
AUDA	+247.5	+1414.6
RA3	+470.1	+1414.6
RA2	+721.3	+1414.6
RA1	+943.9	+1414.6